



# PHYSICAL EVIDENCE COLLECTION MANUAL

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## GENERAL PACKAGING INSTRUCTIONS

Case reports are required to accompany all evidence except drug cases. Do not put the case reports inside evidence envelopes.

- A. **Chain of custody** is a written record of names and dates for custody of an item of physical evidence. All physical evidence must be accompanied by a written chain of custody.

**Required steps:**

1. Mark the evidence, or if it's too small, mark the envelope or packaging material with your initials.
2. Place evidence in the appropriate container and mark the container with case number, item number and a brief description of the contents.
3. Seal securely to prevent cross-contamination.
4. Personalize the seal with the signature of the person sealing the envelope and the date.
5. Always sign the chain of custody with name and date when transferring.
6. Transport to laboratory in appropriate fashion. If using a property clerk to transport the evidence, be sure to sign the chain of custody and give the clerk the case report.

- B. **Packaging of evidence:** Please follow these guidelines when packaging physical evidence.

For your convenience we provide free evidence envelopes. Contact your local Forensic Services Laboratory at one of the addresses below.

**REMEMBER:** Put case reports and evidence inventory on the outside of the evidence envelopes or box.

**Package:**

- Clothing in paper sacks or evidence envelopes.
- Over-size evidence in brown paper, sealed at the edges.
- Place individually wrapped items from the same case in a box unless otherwise noted.

- C. Mailing Instructions:** Mail via United Parcel Service (UPS), registered U.S. Mail or Federal Express. Request confirmation of delivery.

**Meridian**

Idaho State Police  
Forensic Services  
700 S. Stratford, Ste 125  
Meridian, ID 83642  
884-7170

**Coeur d' Alene**

Idaho State Police  
Forensic Services  
615 W. Wilbur, Ste B  
Coeur d' Alene, ID 83815  
209-8700

**Pocatello**

Idaho State Police  
Forensic Services  
209 E. Lewis  
Pocatello, ID 83201-6419  
232-9474

## **BIOLOGICAL STAIN EVIDENCE**

Promptly submit any biological stain evidence to the laboratory to prevent degradation. Biological evidence includes blood, semen, saliva and any other evidence containing biological fluids.

### **A. Blood Stains (Identification and Comparison):**

**NOTE: Dry moist articles and swabs before packaging.**

1. Photograph blood pattern – use ruler for scale if necessary.
2. Either collect the whole article or use a barely moist swab (like a Q-tip) to swab the stain (use water to moisten the swabs). Also, using another swab, swab a nearby unstained area as a “control.” Air-dry all swabs.
3. package items or swabs in PAPER – no plastic bags.
4. Keep cool or frozen.

### **B. Semen and Saliva Stains (Identification and Comparison)**

1. Collect the whole article, or use a barely moist swab.
2. Mark the stain when wet, then dry article.
3. Package item in PAPER – no plastic bags.
4. Keep cool or frozen.

### **C. Sex Crime Kits: May also be used for suspect’s samples (including penile swabbing from suspect, if within 22 hours of incident) or for victim autopsy samples.**

**NOTE: Refrigerate these kits, but DO NOT FREEZE!**

1. Kits are available free of charge from your local Forensic Services Laboratory.
2. After taking samples, be sure kits have all the needed samples by checking steps with hospital staff.
3. check that seals are intact and hospital staff has started chain of custody.
4. Collect known samples for comparison – typically blood and saliva; analyst will specify.
5. If collecting penile swabbing from suspect, use moist swab. Besides swabbing the penile shaft, also collect from testes and pubic hair, which interfaces with penis (3 areas total).

## TRACE EVIDENCE

*This service is not offered by Idaho State Police Forensic Services*

**Trace Evidence** includes items such as hair, fibers, any small mutually transferred material, paint chips, glass and plastics, and headlight filaments. Extra care is needed when packaging trace evidence so that it doesn't get damaged or lost.

**NOTE:** Take care not to contaminate the scene.

### **A. Hairs, Fibers, any small mutually exclusive material:**

1. Package carefully by folding in paper and securing in individual envelopes. Can use sticky side of Post-it™ to affix hairs and fibers, then fold.
2. Collect comparison samples. Collect hair by pulling 12 – 20 hair strands (if pubic, can be cut at skin surface). Package as described above.

If trace evidence is a fiber, the comparison sample is the whole garment or cuttings from a rug, upholstery, etc. Package in paper, seal well to prevent contaminating other samples.

### **B. Paint chips from vehicles:** This is a comparison test. You must submit two samples from both the suspect's and victim's vehicles.

1. Remove all layers of paint by chipping.
2. Package all samples in separate, sealed containers, such as folded papers or small vials.
3. Label the source of each sample and indicate whether the sample is known (K) or questioned (Q).

The (K) Known samples are from the suspect's and victim's vehicles, close to, but not involved in the impact.

The (Q) Questioned samples are from the area of transfer on suspect's and victim's vehicle.

### **C. Glass and Plastics:** This is a comparison test. The lab does not currently test microscopic-size samples (see comments below). The lab does perform physical matching tests on larger than microscopic fragments.

1. Physical Matching of Glass or Plastic Pieces
  - i. Collect all fragments from the scene.
  - ii. Collect all possible matching pieces from source(s).
  - iii. Package matching and scene fragments separately. Package all samples in such a way as to prevent further breakage.

- iv. Label the source of each sample.
2. Microscopic fragments (collection and packaging)
- i. Microscopic size fragments are found mostly in shoes or on clothing. If microscopic fragments are suspected, carefully package the whole item in folded paper, then place inside a well-sealed envelope or sack. Tape the corners so no fragments can escape, and label.
  - ii. collect comparison glass or plastic from suspected source (broken window, headlight, etc.) Package in paper using sufficient padding to ensure that sharp edges can't poke through the taped edges and to prevent glass fragments from escaping.

**D. Headlight or Taillight On/Off Filament Examination:** Extra care is required when packaging filament samples.

- 1. Package the lamp to prevent further damage by either:
  - i. taping inside a padded styrofoam cup.
  - ii. anchoring in a small cardboard box..
- 2. On taillight assemblies, be sure to submit a sketch indicating which lamp is the turn signal, backup, etc.

## CONTROLLED SUBSTANCES

**Controlled Substances:** Generally, positive identification of the substance is the only test performed. Sample purity is analyzed only by special request.

1. Some drug exhibits may contain very large amounts of plant material or powder. Please contact the appropriate lab manager to discuss how much of the exhibit needs to be submitted.
2. **Do not send syringes with needles or razors!** Transfer the syringe liquid to a separate container.
3. Package as directed in the General Packaging Instructions.

### REMEMBER:

- If using a field test, **do not** submit the used test kit or materials.
- Package fresh mushrooms and marijuana plants in **PAPER** not plastic.
- Dry Plant material before submitting to the lab if possible.

# TOXICOLOGY

Toxicology is the testing of urine and blood for drugs of abuse, including alcohol and other drugs which may cause impairment. Urine is generally the specimen of choice for drug testing. Blood is the specimen of choice for alcohol. Blood will be screened for drugs at the officer's request if the blood alcohol level is below 0.12 percent.

Urine kits are provided free of charge by the BFS labs in Pocatello and Coeur d' Alene. Individual agencies will be responsible for purchasing their own blood kits.

**REMEMBER:** Deliver or mail sample as soon as possible! Best results are obtained if the specimen is received at the lab within 24 hours of collection. Delay may impact the lab's ability to confirm suspected drugs. **DO NOT LEAVE SAMPLE IN HOT PATROL CAR!**

## A. Urine:

1. Fill in ALL the information on the collection bottle, labels, and submittal form.
2. Specimen should be collected directly in the container.
3. Specimen should ideally fill at least half of the container (45ml).
4. Secure lid tightly and attach one security seal provided.
5. Place sealed container in the provided plastic biohazard baggy with absorbent pack.
6. Place biohazard baggy with enclosed specimen container and the completed form in the provided mailing container if mailing.
7. Secure mailing container with security seal. If storing, freeze or refrigerate samples.
8. Submit the sample to the appropriate lab (Coeur d' Alene or Pocatello).

## B. Blood:

1. Blood should be drawn in a medically acceptable manner by a qualified individual.
2. The preferred kit for drawing blood is the Becton-Dickinson #4994, the Peavey 5786, or the Terumo T-100AK (Venoject). These have 10 milligrams of sodium fluoride per cubic centimeter of blood as required for legal blood alcohols.
3. Prior to use, confirm the kit is sealed and has not expired.
4. Ask that the tubes be filled as full as possible.
5. Make sure the tubes have been gently rocked back and forth to mix the anti-coagulant and preservative with the blood.
6. **Leave the used needle with the person who drew the blood. It is a biohazard to you and the analyst!**



7. Include list of suspected drugs if drugs other than alcohol are suspected.
8. Complete the kit paperwork and seal with provided seals. If storing, refrigerate, but **DO NOT FREEZE**.
9. Send samples for blood alcohol testing to the appropriate lab (Coeur d' Alene or Pocatello).

NOTE: If a kit is not available, use tubes containing 10 milligrams of sodium fluoride per cubic centimeter of blood. Wrap the tubes in cotton or absorbent material and package in a strong mailing carton. Send blood samples to the Coeur d' Alene or Pocatello Laboratory.

## FIREARMS TESTING

Firearms testing includes bullets, cartridge cases, weapons function, safety and serial number restoration.

### A. Comparison of Bullets, Cartridge Cases, and Shotshell Components:

1. Collect all fragments possible.
2. Package all fragments separately in tissue paper.

NOTE: If from autopsy, rinse and allow to air dry BEFORE packaging in paper.

3. Label the source of each sample and indicate whether the sample is (K) Known or (Q) Questioned. **DO NOT MARK BULLET OR CASES!**

### B. Weapons (Handle accordingly if fingerprinting is needed):

1. Record position of hammer (see example).
2. Unload and submit all available ammunition.
3. Package weapon and ammunition separately.
4. Label appropriately.
5. Indicate all exams desired, i.e., serology, fingerprinting, firing condition, or serial number restoration.

**NOTE: DO NOT DRY-FIRE OR TEST-FIRE THE WEAPON!**

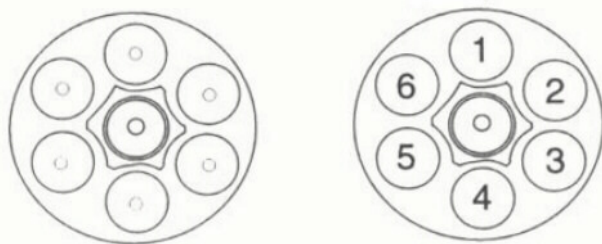
### 6. Marking ammunition recovered in weapons:

#### Revolvers:

##### FACING REAR OF CYLINDER

Appearance of cylinder as recovered.

Diagram to be made by officer recovering weapon.



Scratch arrow on rear face of cylinder to indicate the chamber position under hammer (inline with barrel), when recovered. Then prepare diagram numbering in clockwise direction the remaining chambers, i.e., 2.3.4.5.6. etc.

**Pistols:**

1. Remove magazine.
2. Unload chamber.
3. If needed, have all items checked for fingerprints.

**C. Evidence for Distance Determination:**

1. Record position of cylinder and ammunition.
2. Photograph the scene and autopsy with scale in photos.
3. Dry garments before packaging. Package by laying flat on butcher paper and **rolling**.
4. Submit actual weapon and identical ammunition (different barrels and ammunition produce different results).
5. submit the incident and autopsy reports with the evidence.
6. Package and mark individually wrapped evidence as described in **General Packaging Instructions**.

- D. Gunshot Residue:** Studies show GSR remains on hands for 3 hours, on face for 8 hours and nasal cavity for 48 hours. Call forensic laboratory for proper collection technique.

**REMEMBER:** Once it is collected, it is stable and can be stored indefinitely. Has to be sent to an outside laboratory at agency expense.

**E. Tool Marks:** This is a comparison test. You must submit the tool(s) and either the marked item or a photograph. The tool and marked object should be packaged separately.

**NOTE: DO NOT ATTEMPT TO “FIT” TOOL INTO TOOL MARK!**

**F. Tools:**

1. Package tool in wrapped and taped paper to prevent loss of trace evidence and damage to the surface of the tool.
2. Label appropriately.
3. Brace wrapped tool inside box and package according to **General Packaging Instructions**.

**G. Object from Crime Scene:**

1. If possible, submit the whole item to the lab. Follow **General Packaging Instructions**.  
If not possible to submit whole item: Photograph the item at close, medium and distant ranges and submit photos to laboratory as described in **General Packaging Instructions**.
2. Call the forensic laboratory for assistance on casting tool mark.

## FOOTWEAR EVIDENCE COLLECTION

**Footwear Evidence Collection:** The ability to make comparisons between shoes and an impression depends entirely on the quality of the photographs and casts and/or “lifts” of the impression. Please follow directions carefully.

### A. Photographs of impressions (Use TMAX 100 black & white film).

1. Fill the camera frame with the whole impression.
2. Include an accurate scale or ruler **at the same level as the impression** in the picture. Place the scale as close **to the impression** as possible without touching the impression.
3. The camera **lens must be completely parallel to the impression** for all pictures (angled photos distort the image).
4. Position a flashlight or flash with sync. Cord so that the light source is at least five feet away from the impression.
5. Keeping a log of the photos, photograph the impression from **north, south, east and west** with three different lighting angles for a total of 12 photos.

**NOTE: For dust impressions:** dust impressions can often be lifted. Place the flash or flashlight at the same level as the impression and photograph using a bracket of exposures. Photograph in total darkness if possible.

6. Submit photos and negatives to the lab, packaged as noted in **General Packaging Instructions**.
7. Submit comparison shoes, if available, packaged as noted in **General Packaging Instructions**.
8. Phone forensic laboratory for assistance.

### B. Casting of impressions: In case of tire tracks and other difficult or unusual situations, please contact the forensic laboratory for assistance.

**REMEMBER:** Casts back up photographs. Photograph properly first, then cast.

1. Place 1 ½ pounds of dental stone and 9oz of water in a large, heavy-duty ziplock bag and mix well.
2. Carefully pour the mixture onto the impression using a stick to deflect the direct stream and prevent damage to the impression.
3. Wait at least 20 minutes before attempting to lift the cast. **DO NOT CLEAN THE CAST!**
4. Label casting with pencil or black permanent marker.
5. After the **cast has dried for 24 hours**, wrap in **PAPER** (never use plastic!) sealed with tape.

6. Place wrapped casting in a box. **PAD WELL** with newspapers or other packing material. Mark package and seal as noted in **General Packaging Instructions**.

# ARSON

Arson evidence consists of three types of samples collected during the investigation of a fire of suspicious origin. These sample types are important to the investigator and the laboratory in the analysis, interpretation, and adjudication of a case.

**A.** A question sample includes materials suspected of containing a liquid accelerant. Typical examples include, but may not be limited to, burned substrate regions at a fire scene containing unusual or suspected char patterns, a suspect's clothing and shoes, and liquids located at the fire scene that are suspected of being an accelerant.

**B.** A comparison standard consists of a pure sample of the liquid accelerant believed to have been used to ignite or accelerate a fire. The standard sample comes from a known, documented source. Typical examples of a standard sample include: 1) an unopened container of the accelerant product purchased through a supply or retail store, or 2) samples obtained at the service station where the product is suspected of originating from.

**C.** A comparison control consists of a sample of the site substrate that does not contain the liquid accelerant. Collecting these samples allows the arson analyst to observe the characteristics of the substrate and make a more informative conclusion based on this data. Ideally, the control sample would be burned to the same extent as any question sample. If a burned comparison control is not available, collect a non-burned portion of the typical material. If needed, the laboratory will burn the sample as part of its work-up.

**D. Collection and packaging of samples:** Collect samples using uncontaminated utensils. Care must be exercised to prevent cross-contaminating samples. Collection tools (shovels, knives, gloves, pipets, etc.) should be cleaned or disposed of between samples. Packaging supplies may be obtained from packaging, evidence, or laboratory supply companies.

1. Packaging of debris samples and a suspect's clothing or shoes:
  - ii. Samples must be collected in friction lid cans. Ensure that cans are unused and unlined. Laboratory analysis trapping techniques require an air space in any sample container, so do not fill cans more than  $\frac{3}{4}$ -full. Size of the can should be proportional to the size of the sample. Affix arson evidence label and place an evidence tape and any identifying marks on such.
  - ii. Kapak (polyester) bags are to be used **only** for objects which will not fit into a friction lid can. Seal the bag with a heat sealer immediately following collection, and place evidence tape and identifying marks along this heat seal. Place an arson evidence label on the bag.
  - iii. Friction lid cans and Kapak bags are the only packaging containers approved by our laboratory.

2. Packaging for liquid samples:
  - i. Liquid **question** samples that appear to be solely a petroleum product and liquid **comparison standard** samples should be placed in a 2ml screw-top vial using a disposable pipet. Fill the vial and tape the lid to prevent loosening. Place vial into a friction lid can filled with an absorbent material such as cat litter or vermiculite. Affix an arson evidence label and place evidence tape/initials on the can's seal. **Never ship the entire can or bottle of a petroleum product to the laboratory. Doing so violates DOT shipping requirements.**
  - ii. Liquid question samples that appear to contain only a trace of a petroleum product will require judgement as to how much sample should be collected. **Remember** that the sample container should be larger than any liquid collected to allow for expansion. Federal shipping regulations limit that amount of any petroleum product that can be transported without special handling procedures. For further information refer to BFS document, *Physical Evidence Collection for Arson Investigators*, or contact the Pocatello laboratory.

**C. Information to include when submitting cases:**

1. A cover letter.
2. Fire scene sketches.
3. Incident report.

**D. Submission of arson evidence:**

1. Submit arson evidence to the Pocatello laboratory, as this is the only laboratory analyzing such material at this time.
2. When shipping, use UPS and specify that a signature is required upon delivery.

## **LATENT FINGERPRINT EVIDENCE**

**A. Follow the instructions in the General Packaging Section.**

**B. If your agency has:**

- 1. Evidence you wish to have processed for latent prints**, it should be submitted to the ISP FS Latent Fingerprint Section.
- 2. Latent lift cards or 1:1 photographs accompanied by victim/suspect prints or the appropriate subject information (i.e. DOB/SS#/SID#)**, they should be submitted to the ISP FS Latent Fingerprint Section. Depending on the type of evidence, it may be hand delivered, delivered by UPS, Federal Express, or Certified U.S. Mail. Please direct the above submissions to:

**ISP FS Latent Fingerprint Section  
700 S. Stratford Drive  
Meridian, ID 83642**

- 3. Latent lifts or 1:1 photographs with no associated suspect or victim elimination prints**, they should be submitted directly to the ISP Bureau of Criminal Identification so that they may be expeditiously entered into the AFIS system. (The Bureau of Criminal Identification does not have the facilities to process evidence for latent prints, that function is carried out by the latent fingerprint examiners in Forensic Services.)

**ISP Bureau of Criminal Identification  
700 S. Stratford Drive  
Meridian, ID 83642**

If you have any questions concerning case work or the packaging of evidence, please feel free to contact us at one of the numbers listed below.

The lab number is (208) 884-7170.

**Latent print processing or comparison** inquires should be directed to Randy Parker, Latent Fingerprint Section Supervisor at (208) 884-7149.

**AFIS** inquires should be directed to Dawn Peck, BCI Operations Officer at (208) 884-7136.

**C. Agencies should make requests** for crime scene assistance through the Regional Special Agent in Charge of Idaho State Police Investigations.